MEDICAL POLICY – 8.03.05
Outpatient Pulmonary Rehabilitation

Introduction

Pulmonary means “relating to the lungs.” Pulmonary rehabilitation is generally given to people with chronic lung disease when medication no longer helps. It’s also used before and after specific types of lung surgery. The goal is to help a person gain and keep their highest level of functioning and independence. A team of healthcare professionals cover topics that include:

- Education about the specific lung condition and how to manage it
- Nutrition
- Breathing re-training
- Exercise

This policy describes when pulmonary rehabilitation may be considered medically necessary.

Note: The Introduction section is for your general knowledge and is not to be taken as policy coverage criteria. The rest of the policy uses specific words and concepts familiar to medical professionals. It is intended for providers. A provider can be a person, such as a doctor, nurse, psychologist, or dentist. A provider also can be a place where medical care is given, like a hospital, clinic, or lab. This policy informs them about when a service may be covered.
## Rehabilitation

<table>
<thead>
<tr>
<th>Rehabilitation</th>
<th>Medical Necessity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A single course of pulmonary rehabilitation</strong></td>
<td>A single course of outpatient pulmonary rehabilitation may be considered medically necessary for treatment of moderate to severe chronic pulmonary disease in patients who are experiencing disabling symptoms and have significantly diminished quality of life despite optimal medical management.</td>
</tr>
<tr>
<td></td>
<td>A single course of outpatient pulmonary rehabilitation may be considered medically necessary as a preoperative conditioning component for those who are considered to be appropriate candidates for lung volume reduction surgery and for lung transplantation (see Related Policies).</td>
</tr>
<tr>
<td><strong>Pulmonary rehabilitation programs after lung transplantation</strong></td>
<td>Pulmonary rehabilitation programs are considered medically necessary following lung transplantation.</td>
</tr>
</tbody>
</table>

## Investigational

<table>
<thead>
<tr>
<th>Rehabilitation</th>
<th>Investigational</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multiple courses of pulmonary rehabilitation</strong></td>
<td>Multiple courses of pulmonary rehabilitation are considered investigational, either as maintenance therapy in patients who initially respond, or in patients who fail to respond, or whose response to an initial rehabilitation program has diminished over time.</td>
</tr>
<tr>
<td><strong>Home-based pulmonary rehabilitation</strong></td>
<td>Home-based pulmonary rehabilitation programs are considered investigational.</td>
</tr>
<tr>
<td><strong>Pulmonary rehabilitation programs after lung surgery and other situations</strong></td>
<td>Pulmonary rehabilitation programs are considered investigational following all lung surgeries other than lung transplantation, including but not limited to lung volume reduction surgery and surgical resection of lung cancer. Pulmonary rehabilitation programs are considered investigational in all other situations.</td>
</tr>
</tbody>
</table>
**Additional Information**

- A pulmonary rehabilitation outpatient program is a comprehensive program that generally includes team assessment, patient training, psychosocial intervention, exercise training, and follow-up. The overall length of the program and the total number of visits for each component may vary from program to program.

- Team assessment includes input from a physician, respiratory care practitioner, nurse, and psychologist, among others.

- Patient training includes breathing retraining, bronchial hygiene, medications, and proper nutrition.

- Psychosocial intervention addresses support system and dependency issues.

- Exercise training includes strengthening and conditioning and may include stair climbing, inspiratory muscle training, treadmill walking, cycle training (with or without ergometer), and supported and unsupported arm exercise training. Exercise conditioning is an essential component of pulmonary rehabilitation. Education in disease management techniques without exercise conditioning does not improve health outcomes of patients who have chronic obstructive pulmonary disease.

- Follow-up to a comprehensive outpatient pulmonary rehabilitation program may include supervised home exercise conditioning.

- Candidates for pulmonary rehabilitation should be medically stable and not limited by another serious or unstable medical condition. Contraindications to pulmonary rehabilitation include severe psychiatric disturbance (e.g., dementia, organic brain syndrome), and significant or unstable medical conditions (e.g., heart failure, acute cor pulmonale, substance abuse, significant liver dysfunction, metastatic cancer, disabling stroke).

**Documentation Requirements**

The medical records submitted for review should document that medical necessity criteria are met. The record should include clinical documentation of the following:

- History and physical examination documenting the severity of the member’s pulmonary disease

AND

- Member has disabling symptoms that have significantly diminished member’s quality of life
Documentation Requirements

despite optimal medical management

OR

- Member is preparing for or recovering from:
  - Lung volume reduction surgery
  - Lung Transplantation

Coding

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT</strong></td>
<td></td>
</tr>
<tr>
<td>94799</td>
<td>Unlisted pulmonary service or procedure</td>
</tr>
<tr>
<td>97799</td>
<td>Unlisted physical medicine/rehabilitation service or procedure</td>
</tr>
<tr>
<td><strong>HCPCS</strong></td>
<td></td>
</tr>
<tr>
<td>G0237</td>
<td>Therapeutic procedures to increase strength or endurance of respiratory muscles, face-to-face, one-on-one, each 15 minutes (includes monitoring)</td>
</tr>
<tr>
<td>G0238</td>
<td>Therapeutic procedures to improve respiratory function, other than described by G0237, one-on-one, face-to-face, per 15 minutes (includes monitoring)</td>
</tr>
<tr>
<td>G0239</td>
<td>Therapeutic procedures to improve respiratory function or increase strength or endurance of respiratory muscles, 2 or more individuals (includes monitoring)</td>
</tr>
<tr>
<td>G0302</td>
<td>Preoperative pulmonary surgery services for preparation for LVRS, complete course of services, to include a minimum of 16 days of services</td>
</tr>
<tr>
<td>G0303</td>
<td>Preoperative pulmonary surgery services for preparation for LVRS, 10 to 15 days of services</td>
</tr>
<tr>
<td>G0304</td>
<td>Preoperative pulmonary surgery services for preparation for LVRS, 1 to 9 days of services</td>
</tr>
<tr>
<td>G0305</td>
<td>Postdischarge pulmonary surgery services after LVRS, minimum of 6 days of services</td>
</tr>
<tr>
<td>G0424</td>
<td>Pulmonary rehabilitation, including exercise (includes monitoring), one hour, per session, up to 2 sessions per day</td>
</tr>
</tbody>
</table>
**Description**

Pulmonary rehabilitation (PR) is a multidisciplinary approach to reducing symptoms and improving quality of life in patients with compromised lung function. PR programs generally include a patient assessment followed by therapeutic interventions including exercise training, education, and behavior change.

**Background**

In 2013, the American Thoracic Society (ATS) and the European Respiratory Society (ERS) have defined PR as a “comprehensive intervention based on a thorough patient assessment followed by patient-tailored therapies that include, but are not limited to, exercise training, education, and behavior change.”

PR programs are intended to improve patient functioning and quality of life. Most research has focused on patients with chronic obstructive pulmonary disease (COPD), although there has been some interest in PR in patients with asthma, cystic fibrosis, or bronchiectasis.

PR is also routinely offered to patients awaiting lung transplantation and lung volume reduction surgery. PR before lung surgery may stabilize or improve patients’ exercise tolerance, teach patients techniques that will help them recover after the procedure, and allow health care
providers to identify individuals who might be suboptimal surgical candidates due to noncompliance, poor health, or other reasons.

Summary of Evidence

Chronic Pulmonary Disease Rehabilitation

For individuals with moderate-to-severe chronic obstructive pulmonary disease (COPD) who receive a single course of outpatient pulmonary rehabilitation (PR), the evidence includes numerous randomized controlled trials (RCTs) and systematic reviews. Relevant outcomes are symptoms, functional outcomes, and quality of life. The published studies found improved outcomes (ie, functional ability, quality of life) in patients with moderate-to-severe COPD who underwent a comprehensive PR program in the outpatient setting. Among the many randomized trials, the structure of the PR programs varies, so it is not possible to provide guidance on the optimal components or duration of a PR program. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals with idiopathic pulmonary fibrosis (IPF) who receive a single course of outpatient PR, the evidence includes an RCT. Relevant outcomes are symptoms, functional outcomes, and quality of life. The number of controlled studies is limited. One small RCT evaluated a comprehensive PR program in patients with IPF; at 3 months postintervention, outcomes did not differ between groups who did and did not receive PR. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals with bronchiectasis who receive a single course of outpatient PR, the evidence includes RCTs, systematic reviews, and observational data. Relevant outcomes are symptoms, functional outcomes, and quality of life. A systematic review of 4 RCTs on PR for patients with bronchiectasis found that some, but not all, outcomes improved more with PR than with nonexercise control conditions immediately after the intervention. The evidence is insufficient to determine the effects of the technology on health outcomes.

Preparation for Lung Surgery

For individuals with scheduled lung surgery for volume reduction, transplantation, or cancer resection who receive a single course of outpatient PR, the evidence includes RCTs and observational studies. Relevant outcomes are symptoms, functional outcomes, and quality of life. There is a lack of large RCTs comparing PR with no PR for preoperative candidates.
undergoing lung volume reduction surgery (LVRS), lung transplantation, or lung cancer resection. Moreover, the available studies have evaluated exercise programs, but not necessarily comprehensive PR programs. In addition, the few small RCTs and observational studies have reported short-term outcomes and inconsistent evidence of benefit even on these outcomes. The evidence is insufficient to determine the effects of the technology on health outcomes.

**PR After Lung Surgery**

For individuals who have had LVRS who receive a single course of outpatient PR, the evidence includes a case series. Relevant outcomes are symptoms, functional outcomes, and quality of life. No published RCTs were identified. The case series evaluated a comprehensive PR program after LVRS in 49 patients who had not received preoperative PR. Health-related quality of life was higher at 3 to 6 months and at 12 to 18 months postsurgery. The series did not provide data on patients who underwent LVRS and did not have postoperative PR, or patients who had preoperative PR. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have had lung transplantation who receive a single course of outpatient PR, the evidence includes RCTs, systematic reviews, and observational studies. Relevant outcomes are symptoms, functional outcomes, and quality of life. Neither of the 2 RCTs identified in a 2010 systematic review reported functional outcomes, but uncontrolled studies have reported improvements in functional outcomes. An RCT, published after the systematic review, found that patients who had a postsurgical exercise intervention walked more 1 year postdischarge than before and had a significantly greater 6-minute walk distance (6MWD). Findings on other outcomes were mixed. Case series data also support improvements in 6MWD after postoperative PR. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who have had lung cancer resection who receive a single course of outpatient PR, the evidence includes 1 RCT. Relevant outcomes are symptoms, functional outcomes, and quality of life. One small RCT evaluated a comprehensive PR program in patients who underwent thoracotomy for lung cancer. The trial was terminated early, had a high dropout rate, and reported mixed findings. An exercise-only intervention in patients who had lung cancer surgery had mixed findings and did not evaluate functional outcomes. The evidence is insufficient to determine the effects of the technology on health outcome.
Repeat or Maintenance Rehabilitation

For individuals who have had an initial course of PR who receive repeat or maintenance outpatient PR, the evidence includes RCTs. Relevant outcomes are symptoms, functional outcomes, and quality of life. There are only a few RCTs and many of them have methodologic limitations and/or did not report clinically significant outcomes. The evidence is insufficient to determine the effects of the technology on health outcome.

Home-Based Rehabilitation

For individuals who have an indication for outpatient PR who receive a single course of home-based PR, the evidence includes RCTs and systematic reviews. Relevant outcomes are symptoms, functional outcomes, and quality of life. Most studies of home-based PR have compared outcomes with standard care. Very few have compared home-based PR with hospital- or clinic-based PR, and the available studies are mostly of low quality. The evidence is insufficient to determine the effects of the technology on health outcome.

Ongoing and Unpublished Clinical Trials

Some currently unpublished trials that might influence this review are listed in Table 1.

Table 1. Summary of Key Trials

<table>
<thead>
<tr>
<th>NCT No.</th>
<th>Trial Name</th>
<th>Planned Enrollment</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ongoing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NCT03299504</td>
<td>Factors Predicting Success in Lung Transplant Recipients Who Have Participated in the COLTT Program (Daily Intensive Post-hospitalization Rehabilitation): A Retrospective Review</td>
<td>70</td>
<td>Mar 2018</td>
</tr>
<tr>
<td>NCT03326089</td>
<td>Short and Long-term Effects of Oxygen Supplemented Pulmonary Rehabilitation in Idiopathic Pulmonary Fibrosis</td>
<td>20</td>
<td>Jun 2018</td>
</tr>
<tr>
<td>NCT02823587</td>
<td>Effects of Pulmonary Rehabilitation on Secretion Transport, Inflammation and Respiratory System Strength and Quality of Life in Patients With Bronchiectasis</td>
<td>60</td>
<td>Jul 2018</td>
</tr>
</tbody>
</table>
NCT No. | Trial Name                                                                 | Planned Enrollment | Completion Date  
---|---|---|---
**Ongoing**  
NCT02426437 | Examining Pulmonary Rehabilitation on Discharged COPD Patients | 150 | Sep 2018  
NCT02842463 | Use of the 6-minute Stepper Test to Individualise Pulmonary Rehabilitation in Patients With Mild to Moderate Chronic Obstructive Pulmonary Disease | 80 | Dec 2018  
NCT03095859 | Post-operative, Inpatient Rehabilitation After Lung Transplant Evaluation: A Feasibility Study | 40 | May 2019  
NCT02426437 | Examining Pulmonary Rehabilitation on Discharged COPD Patients | 150 | Jan 2018  
NCT02887521 | Pulmonary Rehabilitation Before Lung Cancer Resection | 194 | Jan 2020  
**Unpublished**  
NCT02614300 | The Role of Pulmonary Rehabilitation and Airways Clearance Techniques in the Multidisciplinary Management of Non CF Bronchiectasis | 120 | Dec 2017 (unknown)  

NCT: national clinical trial

**Practice Guidelines and Position Statements**

**American Thoracic Society and European Respiratory Society**

A 2013 joint statement on PR was issued by the American Thoracic Society (ATS) and the European Respiratory Society (ERS).¹ The statement included the following relevant conclusions:

- PR provided to patients with respiratory disease other than COPD has demonstrated improvement in respiratory symptoms, exercise tolerance and quality of life.

- Symptomatic individuals with COPD who have lesser degrees of airflow limitation who participate in rehabilitation derive similar improvements in symptoms, exercise tolerance and quality of life as do those with more severe disease.

- Appropriately resourced home-based exercise training has been proven effective at reducing dyspnea and increasing exercise performance in patients with COPD.
British Thoracic Society

A 2013 guideline on PR in adults by the British Thoracic Society includes the following recommendations:

- PR should be offered to patients with COPD with a view to improving exercise capacity, dyspnea and health status, and psychological wellbeing.
- PR programs of 6 to 12 weeks in duration are recommended.
- A minimum of 12 supervised sessions are recommended, although individual patients can gain benefit from fewer sessions.
- If considering a structured home-based program, the following factors need careful consideration: mechanisms to offer remote support and/or supervision, provision of home exercise equipment and patient selection.

American College of Chest Physicians et al

Joint guidelines on management of COPD were issued by the American College of Physicians, the American College of Chest Physicians (ACCP), ATS, and ERS\textsuperscript{34}. The guidelines recommend that “clinicians should prescribe pulmonary rehabilitation for symptomatic patients with an FEV\textsubscript{1} [forced expiratory volume] <50% predicted (Grade: strong recommendation, moderate-quality evidence). Clinicians may consider pulmonary rehabilitation for symptomatic or exercise-limited patients with an FEV\textsubscript{1} >50% predicted (Grade: weak recommendation, moderate-quality evidence).”

American College of Chest Physicians et al

In 2007, joint guidelines on PR for COPD and other chronic respiratory diseases were issued by ACCP and the American Association of Cardiovascular and Pulmonary Rehabilitation.\textsuperscript{35} A number of recommendations, including the following, were based on strong (1A) or moderate (1B) evidence (see Table 2).
Table 2. ACCP and AACPR Pulmonary Rehabilitation Guidelines for Chronic Respiratory Diseases

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>A program of exercise training of the muscles of ambulation is recommended as a mandatory component of pulmonary rehabilitation for patients with COPD</td>
<td>1A</td>
</tr>
<tr>
<td>Pulmonary rehabilitation improves the symptom of dyspnea and improves health-related quality of life in patients with COPD</td>
<td>1A</td>
</tr>
<tr>
<td>Six to 12 weeks of pulmonary rehabilitation produces benefits in several outcomes that decline gradually over 12 to 18 months</td>
<td>1A</td>
</tr>
<tr>
<td>Both low- and high-intensity exercise training produce clinical benefits for patients with COPD</td>
<td>1A</td>
</tr>
<tr>
<td>Unsupported endurance training of the upper extremities is beneficial in patients with COPD and should be included in pulmonary rehabilitation programs</td>
<td>1A</td>
</tr>
<tr>
<td>Higher-intensity exercise training of the lower extremities produces greater physiologic benefits than lower-intensity training in patients with COPD</td>
<td>1B</td>
</tr>
<tr>
<td>Evidence does not support the routine use of inspiratory muscle training as an essential component of pulmonary rehabilitation</td>
<td>1B</td>
</tr>
<tr>
<td>Education should be an integral component of pulmonary rehabilitation; it should include information on collaborative self-management and prevention and treatment of exacerbations</td>
<td>1B</td>
</tr>
<tr>
<td>Pulmonary rehabilitation is beneficial for some patients with chronic respiratory diseases other than COPD</td>
<td>1B</td>
</tr>
</tbody>
</table>

AACPR: American Association of Cardiovascular and Pulmonary Rehabilitation; ACCP: American College of Chest Physicians; COPD: chronic obstructive pulmonary disease; GOR: grade of recommendation.

Medicare National Coverage

In 2007, the Centers for Medicare and Medicaid Services (CMS) affirmed its position that a national coverage determination for PR is not appropriate.36

References


**History**

<table>
<thead>
<tr>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/11/15</td>
<td>New Policy. Add to Rehabilitation Therapy. Policy created with literature review. Considered medically necessary when criteria are met.</td>
</tr>
<tr>
<td>Date</td>
<td>Comments</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>05/01/18</td>
<td>Annual Review, approved April 18, 2018. Policy updated with literature review through January 2018; references 21 and 36 added; reference 26 updated. Policy statements unchanged; statements reordered to align with evidence summary.</td>
</tr>
</tbody>
</table>

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U.S. Department of Health and Human Services
200 Independence Avenue SW, Room S09F, HHH Building
Washington, D.C. 20201, 1-800-368-1019, 800-537-7697 (TDD)

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